

## SAFETY DATA SHEET

Version 6.2  
Revision Date 03/13/2015  
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### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	: Methanol		
Product Number	: M3641		
Brand	: Sigma		
Product Use	: For laboratory research purposes.		
Supplier	: Sigma-Aldrich Canada Co. 2149 Winston Park Drive OAKVILLE ON L6H 6J8 CANADA	Manufacturer	: Sigma-Aldrich Corporation 3050 Spruce St. St. Louis, Missouri 63103 USA
Telephone	: +1 9058299500		
Fax	: +1 9058299292		
Emergency Phone # (For both supplier and manufacturer)	: +1-703-527-3887 (CHEMTREC)		
Preparation Information	: Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956		

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

#### Target Organs

Eyes, Kidney, Liver, Heart, Central nervous system Eyes, Kidney, Liver, Heart, Central nervous system

#### WHMIS Classification

B2	Flammable liquid	Flammable liquid
D1B	Toxic Material Causing Immediate and Serious Toxic Effects	Toxic by ingestion
		Toxic by skin absorption

#### GHS Classification

Flammable liquids (Category 2)  
Acute toxicity, Oral (Category 3)  
Acute toxicity, Inhalation (Category 3)  
Acute toxicity, Dermal (Category 3)  
Specific target organ toxicity - single exposure (Category 1)

#### GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled
H370	Causes damage to organs.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves/ protective clothing.

P301 + P310  
P307 + P311

IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.  
IF exposed: Call a POISON CENTER or doctor/ physician.

#### HMIS Classification

**Health hazard:** 2  
**Chronic Health Hazard:** \*  
**Flammability:** 3  
**Physical hazards:** 0

#### Potential Health Effects

**Inhalation** Toxic if inhaled. Causes respiratory tract irritation.  
**Skin** Toxic if absorbed through skin. Causes skin irritation.  
**Eyes** Causes eye irritation.  
**Ingestion** Toxic if swallowed.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Methyl alcohol

Formula : CH<sub>4</sub>O

Molecular weight : 32.04 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Methanol</b>			
67-56-1	200-659-6	603-001-00-X	<=100%

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### 4. FIRST AID MEASURES

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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### 5. FIREFIGHTING MEASURES

#### Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

#### Explosion data - sensitivity to mechanical impact

No data available

#### Explosion data - sensitivity to static discharge

No data available

#### Further information

Use water spray to cool unopened containers.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

## 7. HANDLING AND STORAGE

### Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Methanol	67-56-1	TWA	200.000000 ppm 262.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Substance may be readily absorbed through intact skin			
		STEL	250.000000 ppm 328.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	Substance may be readily absorbed through intact skin			
		TWA	200.000000 ppm	Canada. British Columbia OEL
	Contributes significantly to the overall exposure by the skin route.			
		STEL	250.000000 ppm	Canada. British Columbia OEL
	Contributes significantly to the overall exposure by the skin route.			
		TWAEV	200.000000 ppm 262.000000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
	Skin (percutaneous)			
		STEV	250.000000 ppm 328.000000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

	Skin (percutaneous)			
	TWA	200.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)	
	STEL	250.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)	

## Personal protective equipment

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 31 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### Specific engineering controls

Use mechanical exhaust or laboratory fumehood to avoid exposure.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form liquid

Colour colourless

### Safety data

pH No data available

Melting point/freezing point Melting point/range: -98 °C (-144 °F)

Boiling point	64.7 °C (148.5 °F)
Flash point	9.7 °C (49.5 °F) - closed cup
Ignition temperature	455 °C (851 °F)
Auto-ignition temperature	455.0 °C (851.0 °F) at 1,013 hPa (760 mmHg)
Lower explosion limit	6 %(V)
Upper explosion limit	36 %(V)
Vapour pressure	130.3 hPa (97.7 mmHg) at 20.0 °C (68.0 °F) 546.6 hPa (410.0 mmHg) at 50.0 °C (122.0 °F) 169.27 hPa (126.96 mmHg) at 25.0 °C (77.0 °F)
Density	0.791 g/mL at 25 °C (77 °F)
Water solubility	completely miscible
Partition coefficient: n-octanol/water	log Pow: -0.77
Relative vapour density	1.11
Odour	pungent
Odour Threshold	No data available
Evaporation rate	No data available

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

Vapours may form explosive mixture with air.

### Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

### Materials to avoid

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

LDLO Oral - Human - 143 mg/kg

Remarks: Lungs, Thorax, or Respiration:Dyspnea. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

LD50 Oral - Rat - 1,187 - 2,769 mg/kg

#### Inhalation LC50

LC50 Inhalation - Rat - 4 h - 128.2 mg/l

LC50 Inhalation - Rat - 6 h - 87.6 mg/l

#### Dermal LD50

LD50 Dermal - Rabbit - 17,100 mg/kg

#### Other information on acute toxicity

No data available

**Skin corrosion/irritation**

Skin - Rabbit - No skin irritation

**Serious eye damage/eye irritation**

Eyes - Rabbit - No eye irritation

**Respiratory or skin sensitisation**

Maximisation Test (GPMT) - Guinea pig - OECD Test Guideline 406 - Does not cause skin sensitisation.

**Germ cell mutagenicity**

Genotoxicity in vitro - Ames test - S. typhimurium - with and without metabolic activation - negative

Genotoxicity in vitro - in vitro assay - fibroblast - negative

Mutation in mammalian somatic cells.

Genotoxicity in vivo - Mouse - male and female - Intraperitoneal - negative

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**Reproductive toxicity**

Fertility classification not possible from current data.

**Teratogenicity**

Damage to fetus not classifiable

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

Causes damage to organs.

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Aspiration hazard**

No aspiration toxicity classification

**Potential health effects**

<b>Inhalation</b>	Toxic if inhaled. Causes respiratory tract irritation.
<b>Ingestion</b>	Toxic if swallowed.
<b>Skin</b>	Toxic if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.

**Signs and Symptoms of Exposure**

Methyl alcohol may be fatal or cause blindness if swallowed.

Effects due to ingestion may include:, Headache, Dizziness, Drowsiness, metabolic acidosis, Coma, Seizures.

Symptoms may be delayed., Damage of the:, Liver, Kidney

**Synergistic effects**

No data available

**Additional Information**

RTECS: PC1400000

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**12. ECOLOGICAL INFORMATION****Toxicity**

Toxicity to fish	mortality LC50 - Lepomis macrochirus (Bluegill) - 15,400.0 mg/l - 96 h NOEC - Oryzias latipes - 7,900 mg/l - 200 h
Toxicity to daphnia	EC50 - Daphnia magna (Water flea) - > 10,000.00 mg/l - 48 h

and other aquatic  
invertebrates

Toxicity to algae      Growth inhibition EC50 - Scenedesmus capricornutum (fresh water algae) - 22,000.0 mg/l - 96 h

**Persistence and degradability**

Biodegradability      aerobic  
Result: 72 % - rapidly biodegradable

**Bioaccumulative potential**

Bioaccumulation      Cyprinus carpio (Carp) - 72 d at 20 °C  
Bioconcentration factor (BCF): 1.0

**Mobility in soil**

Will not adsorb on soil.

**PBT and vPvB assessment**

No data available

**Other adverse effects**

Biochemical Oxygen Demand (BOD)      600 - 1,120 mg/g

Chemical Oxygen Demand (COD)      1,420 mg/g

Additional ecological information      Avoid release to the environment.

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**13. DISPOSAL CONSIDERATIONS**

**Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION**

**DOT (US)**

UN number: 1230    Class: 3      Packing group: II  
Proper shipping name: Methanol  
Reportable Quantity (RQ): 5000 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 1230    Class: 3 (6.1)      Packing group: II      EMS-No: F-E, S-D  
Proper shipping name: METHANOL  
Marine pollutant: No

**IATA**

UN number: 1230    Class: 3 (6.1)      Packing group: II  
Proper shipping name: Methanol

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**15. REGULATORY INFORMATION**

**WHMIS Classification**

B2	Flammable liquid	Flammable liquid
D1B	Toxic Material Causing Immediate and Serious	Toxic by ingestion

Toxic Effects

Toxic by skin absorption

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

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## 16. OTHER INFORMATION

### **Text of H-code(s) and R-phrase(s) mentioned in Section 3**

#### **Further information**

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